

PLOMP et al
Appl. No. 10/538,000
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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (withdrawn) A process for production of a food product comprising at least one heating step, and adding one or more enzymes to an intermediate form of said food product in said production process; whereby the enzyme is added prior to said heating step in an amount that is effective in reducing the level of amino acids that are present in said intermediate form of said food product which amino acids are involved in the formation of acrylamide during said heating step.
2. (withdrawn) The process according to claim 1, wherein the food product is made from at least one plant raw material.
3. (withdrawn) The process according to claim 2, wherein the plant raw material is cereal flour or potato.
4. (withdrawn) The process according to claim 1, wherein the enzyme modifies a the side chain of amino acids that are involved in the formation of acrylamide during the heating step of the production process and whereby the degradation products of said amino acids are not, or at least to a lesser extent, giving rise to the formation of acrylamide in comparison with the unmodified form of the amino acid.

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5. (withdrawn) The process according to claim 4, wherein the enzyme is modifying the side chain of at least one amino acid selected from the group consisting of asparagine, glutamine, cysteine, methionine, proline, serine, phenylalanine, tyrosine and tryptophane.
6. (withdrawn) The process according to claim 1, wherein the enzyme is added as an enzyme preparation or produced in situ by a microorganism producing said enzyme.
7. (withdrawn) The process according to claim 1, wherein the enzyme preparation is derived from a microorganism.
8. (withdrawn) The process according to claim 7, wherein the microorganism is a bacterium, a fungus or a yeast.
9. (withdrawn) The process according to claim 1, wherein the enzyme is asparaginase (EC 3.5.1.1) or glutaminase (EC 3.4.1.2).

Claims 10-21 (canceled)

22. (previously presented) An isolated asparaginase with an amino acid sequence which is at least 90% identical to SEQ ID NO: 3.
23. (previously presented) The isolated asparaginase according to claim 22 obtained from *Aspergillus niger*.

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24. (currently amended) An isolated asparaginase obtained by expressing a polynucleotide which hybridizes under high stringency conditions to the complement of SEQ ID NO: 1 or SEQ ID NO: 2, wherein high stringency conditions are hybridization in 5x sodium chloride/sodium citrate (SSC) at 68°C, 5x Denhardt's solution, and 1.0% sodium dodecyl sulfate (SDS)[[:]] and washing in 0.2XSSC/0.1% SDS at room temperature or by expressing a vector comprising said polynucleotide in an appropriate host cell.

25. (previously presented) A recombinant asparaginase comprising an enzymatically active fragment of the asparaginase according to claim 22.

26. (withdrawn) A method for manufacturing an asparaginase with an amino acid sequence which is at least 90% identical to SEQ ID NO: 3 comprising:

- (a) transforming a host cell with the polynucleotide according to claim 24 or a vector comprising said polynucleotide,
- (b) culturing said cell under conditions allowing expression of said polynucleotide, and
- (c) optionally purifying the encoded polypeptide from said cell or culture medium.

Claim 27. (canceled)

28. (withdrawn) A recombinant host cell expressing a polypeptide according to claim 22.

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29. (withdrawn) A method of producing a food product comprising incorporating into the food product an asparaginase according to claim 22.

Claims 30-31 (canceled).

32. (previously presented) The isolated asparaginase according to claim 24, wherein the host cell is *Aspergillus niger*.

33. (previously presented) The isolated asparaginase according to claim 22, wherein the amino acid sequence comprises SEQ ID NO: 3.

34. (currently amended) The isolated asparaginase according to claim 22, wherein the amino acid sequence is at least 95% identical to SEQ ID NO: 3 ~~and the asparaginase has asparaginase activity.~~

35. (withdrawn) The method for manufacturing an asparaginase according to claim 26, wherein the amino acid sequence comprises SEQ ID NO: 3.

36. (withdrawn and currently amended) The method for manufacturing an asparaginase according to claim 26, wherein the amino acid sequence is at least 95% identical to SEQ ID NO: 3 ~~and the asparaginase has asparaginase activity.~~

37. (withdrawn) The process according to claim 2, wherein the plant raw material is wheat flour.

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38. (withdrawn) The process according to claim 1, wherein the enzyme is an asparaginase having an amino acid sequence which is at least 95% identical to SEQ ID NO: 3 and retains asparaginase activity.

39. (withdrawn and currently amended) The process according to claim 1, wherein the enzyme is an asparaginase obtained by expressing a polynucleotide which hybridizes under high stringency conditions to the complement of SEQ ID NO:1 or SEQ ID NO:2, wherein high stringency conditions are hybridization in 5x sodium chloride/sodium citrate (SSC) at 68°C, 5x Denhardt's solution, and 1.0% sodium dodecyl sulfate (SDS) [[:]] and washing in 0.2XSSC/0.1% SDS at room temperature or by expressing a vector comprising said polynucleotide in an appropriate host cell.

40. (previously presented) A recombinant asparaginase comprising an enzymatically active fragment of the asparaginase according to claim 24.